

## ABSTRACT

In a fluid mixing device calibration and complementary gases are supplied to constant flow devices (10,12). The flows through devices (10,12) are adjusted to be equal. The two gas flows are connected to switching valves (14,16), which allow the gas flows to be either vented or fed to the frequency multiplier (18). The two valves (14,16) are coupled to switch simultaneously but in opposite positions. Thus, the flow rate into the frequency multiplier (18) is constant but may be switched to comprise either calibration or complementary gas. The frequency multiplier divides the input stream into a number of equal streams which, after different time delays have been introduced, are recombined to produce a single stream of reduced concentration ripple and periodicity. The output from the frequency multiplier (18) fed to a series of chambers (20-24) where each chamber produces an attenuation of the concentration ripple and a time response to a change in concentration. As the attenuations of the chambers (20-24) are multiplicative and the time responses are additive, multiple chambers give a higher ratio of ripple attenuation to time response than does a single chamber. Better and faster production of substantially homogenized fluid mixtures is possible.